



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/857,382	07/23/2001	Hidefumi Fujimoto	KNI-152-A	4726

21828 7590 06/28/2002

CARRIER BLACKMAN AND ASSOCIATES  
24101 NOVI ROAD  
SUITE 100  
NOVI, MI 48375

EXAMINER

PIZIALI, ANDREW T

ART UNIT

PAPER NUMBER

1775

DATE MAILED: 06/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

ME7

**Office Action Summary**

Application No.

09/857,382

Applicant(s)

FUJIMOTO ET AL.

Examiner

Andrew T Piziali

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 July 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All   b) ☐ Some \*   c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1.                      6) ☐ Other:

Art Unit: 1775

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 11 and 13 rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claim 11, the specification is not enabling for a hydrophilic member with an overcoat layer formed directly on the substrate. The specification only speaks to an undercoat layer or a thin metal film being formed directly on the substrate.

*maintain* ✕ Regarding claim 13, the thin metal film's position is disclosed in the specification as between the glass plate and the undercoat film (page 8, lines 18-21), but claim 13 claims that the thin metal film is to be formed between the undercoat film and the tin oxide layer.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 2 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 claims that the tin oxide layer has a rutile structure, but rutile structures may only belong to titanium oxide. See the enclosed definition of the word "rutile".

Art Unit: 1775

Claim 11 claims that the overcoat layer is formed directly on the surface of the substrate, but it is not clear how this can be since claim 1 claims that the tin oxide layer is formed on the surface of the substrate.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-7 and 9-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,379,776 to Tada et al. in view of US Patent No. 5,854,708 to Komatsu et al.

Regarding claims 1-20, Tada discloses a hydrophilic member comprising a photocatalyst layer formed on a surface of a substrate and an overcoat layer comprising silicon oxide formed on the surface of the photocatalyst layer (column 2, lines 16-32 and column 10, lines 3-17). Tada discloses that the mean surface roughness of the top surface is within a range of 1.5 to 80 nm (column 13, lines 11-31). Tada discloses that the photocatalyst layer may comprise  $\text{TiO}_2$  (column 2, lines 48-54), but does not disclose the use of  $\text{SnO}_2$  as the photocatalyst layer. Komatsu discloses that a photocatalyst layer may comprise  $\text{TiO}_2$  or  $\text{SnO}_2$  (column 2, lines 40-44). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use  $\text{SnO}_2$  as the photocatalyst layer of Tada, because it is functionally equivalent to  $\text{TiO}_2$ , because both materials function as photocatalysts.

Regarding claims 3 and 14, Tada discloses that the mean surface roughness of the photocatalyst layer is within a range of 1.5 to 80 nm (column 2, lines 16-22).

Art Unit: 1775

Regarding claims 4 and 15-16, Tada discloses that the mean spacing of the irregularities of the top surface of the overcoat layer is within a range of 4 to 300 nm (column 13, lines 11-31).

Regarding claims 5 and 17-19, Tada discloses that the photocatalyst layer has a thickness within a range of 10 to 500 nm (column 3, lines 63-67 and column 4, lines 1-6).

Regarding claims 6 and 20, Tada does not disclose a specific thickness range for the SiO<sub>2</sub> overcoat layer, but it would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust the thickness of the overcoat layer, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. ***In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).** In addition, Komatsu discloses an overcoat layer of SiO<sub>2</sub> and further discloses that the layer may have a thickness within the range of 15 to 100 nm (column 3, lines 1-12 and column 4, line 54). It would have been obvious to one having ordinary skill in the art at the time the invention was made to select an overcoat layer thickness within the range of 15 to 100 nm, as disclosed by Komatsu, because this thickness is sufficient to provide a hydrophilic property while preventing organic substances from being adhered to the hydrophilic member.

Regarding claim 9, Tada discloses that the substrate may be soda lime silicate glass (column 13, lines 62-67).

Regarding claims 10 and 13, Tada does not disclose using the hydrophilic member as a mirror, but Komatsu discloses using the hydrophilic member as a mirror by placing a thin metal film between the substrate and the photocatalytic layer (column 8, lines 6-17 and Figure 10).

Art Unit: 1775

Regarding claims 12-13, Tada discloses an alkali-shut-ff undercoat film of  $\text{SiO}_2$  disposed between the surface of the substrate and the photocatalytic layer (column 2, lines 16-22 and column 3, lines 14-17).

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tada in view of Komatsu as applied to claim 12 above, and further in view of US Patent No. 5,605,609 to Ando et al.

Tada discloses that the alkali barrier undercoat film may be a monocomponent or a multicomponent composition containing silicon oxide (column 3, lines 14-17), but fails to mention the inclusion of tin oxide. Ando discloses an alkali barrier oxide film comprising silicon and tin (column 10, lines 58-67 and column 11, lines 1-12). It would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute an alkali barrier oxide film comprising silicon and tin, as disclosed by Ando, for the alkali barrier film of Tada, because it is functionally equivalent to the alkali barrier films disclosed by Tada.

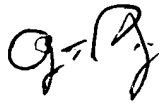
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T Piziali whose telephone number is (703) 306-0145. The examiner can normally be reached on Monday-Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (703) 308-3822. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 827-9310 for regular communications and (703) 872-9311 for After Final communications.

Art Unit: 1775

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-5665.



atp  
June 19, 2002

Andrew T Piziali  
Examiner  
Art Unit 1775



DEBORAH JONES  
SUPERVISORY PATENT EXAMINER